# Operational Risk Management

# Navy Heritage Video

# Introduction

- The ORM tool used by the Navy is a proven successful tool for operational use, but can be applied to many activities that involve risk.
- The task of driving is a matter of managing risk and maintaining the proper attitude.

# Importance

- Every Sailor and piece of equipment is critical to mission success.
- Whenever either is affected by a mishap, mission accomplishment suffers.
- Managing risk is the key to being successful and safer.

# Objective

Upon completion of this lesson, you will be able to:

- Explain the ORM process.
- Apply ORM to a real-life situation.

# Scenario

Johnny Asphalt is anxious to get to Daytona Beach, FL, over the 4th of July weekend.  He has his car packed and is planning to drive straight there from Norfolk, VA, after he gets off work on Thursday afternoon. The trip is 725 miles and should take about 13 hours. He plans to drive back on Monday afternoon, arriving in Norfolk just in time for duty on Tuesday morning. He thinks his plan will allow for maximum fun time in Florida.

# Outline

- ORM process and principles
- “Identify Hazards” step
- “Assess Risks” step
- “Make Risk Decisions/Implement Controls” step
- “Supervise” step

# ORM Process and Principles

# Introduction

- ORM is a process the Navy has designed to help us make informed decisions regarding risk situations.
- It must be used by all Sailors at all levels to help minimize risk to acceptable levels.
- There are also ORM principles that must be applied when using the ORM process.

# ORM Definition

ORM is a decision-making methodology used by people at all levels to increase operational effectiveness by anticipating hazards and reducing the potential for loss, thereby increasing the probability of a successful mission.

# ORM Facts

- Increases our ability to make informed decisions.
- Minimizes risk to acceptable levels.
- Should be applied both on the job and in off-duty activities.
- Can be done formally in a group setting or informally in your head.

# ORM Concepts

- Everyone is responsible for applying ORM.
- Risk is inherent in everything you do on the job or in off-duty activities.
- Risk can be controlled.

# ORM Process

- Identify Hazards
- Assess Hazards
- Make Risk Decisions
- Implement Controls
- Supervise

# ORM Principles

- Accept risk when benefits outweigh the costs.
- Accept no unnecessary risk.
- Anticipate and manage risk by planning.
- Make risk decisions at the right level.

# Create the definition of ORM

Operational Risk management is a(n)

a process

designed by the Navy to help

all Sailors

make informed decisions regarding

risk situations

- train Marines about shipboard safety protocol
- enlisted Sailors
- officers
- all Sailors
- process
- new Sailors of all ranks
- learn about safety
- make informed decisions regarding risk situations
- team-building activity
- emergency procedure
- management level course
- train subordinates

# Determine the step number (1 - 5) for each action in the ORM process.

| | |
|---|---|
| Supervise | STEP 5 |
| Make Risk Decisions | STEP 3 |
| Implement Controls | STEP 4 |
| Identify Hazards | STEP 1 |
| Assess Hazards | STEP 2 |

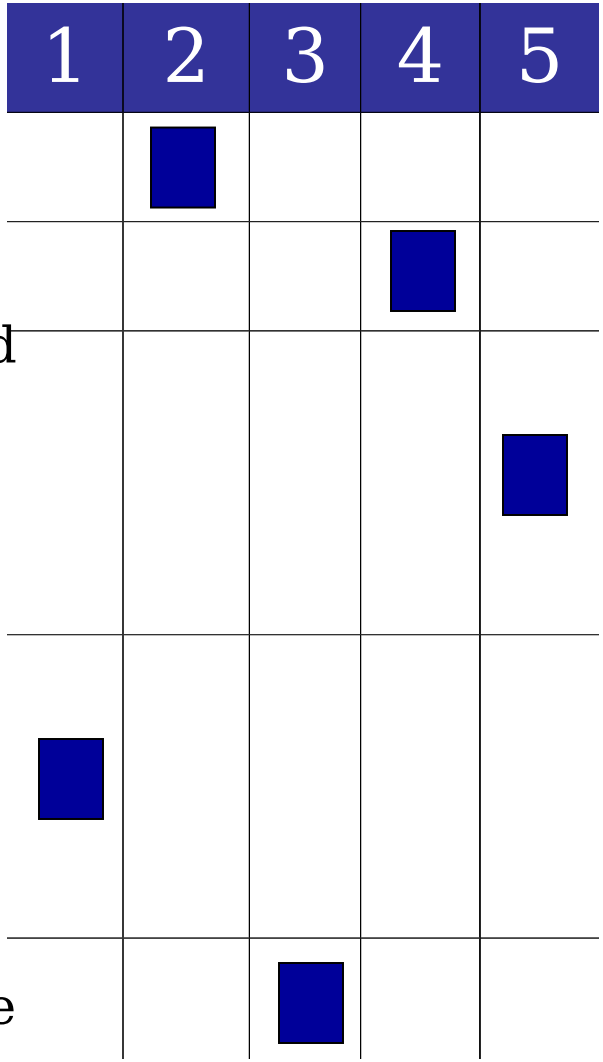
# Match each explanation in the ORM process to its step number.

- Determine severity and probability.
- Put recommended measures in place.
- Monitor to ensure process has been carried out as planned. Anticipate changes, and if the plan or conditions change significantly, stop and reassess. Continually assess hazards and their control measures.
- Survey the area to determine what conditions exist that may cause work stoppage, injury or equipment damage and determine factors that may negatively affect human or equipment performance.
- Determine what control measures would most effectively lessen the risks. Determine if benefits outweigh costs

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | ☐ |
| ☐ | ☐ | ☐ | ☐ | ☐ |
| ☐ | ☐ | ☐ | ☐ | ☐ |
| ☐ | ☐ | ☐ | ☐ | ☐ |
| ☐ | ☐ | ☐ | ☐ | ☐ |

# A: Step number matched to explanation in the ORM process

- Determine severity and probability.
- Put recommended measures in place.
- Monitor to ensure process has been carried out as planned. Anticipate changes, and if the plan or conditions change significantly, stop and reassess. Continually assess hazards and their control measures.
- Survey the area to determine what conditions exist that may cause work stoppage, injury or equipment damage and determine factors that may negatively affect human or equipment performance.
- Determine what control measures would most effectively lessen the risks. Determine if benefits outweigh costs.



# Select the 4 principles of ORM

- ☐ responsibility e decisions risk
- ☐ ept all risks
- ☐ pt no cessary risks
- ☐ pt risks when outweigh fits
- ☐ risk decisions right level
- ☐ nage risk ntaneously
- ☐ e risk through ur cycle
- ☐ cept only necessary ks
- ☐ pt only CAT 4
- ☐ pt risks when fits outweigh
- ☐ pt risk when cally correct so
- ☐ age risk by ning

# Correct!

- Your answer is correct!
- This is one of the Principles of ORM.

BACK NEXT

# Incorrect!

- Your answer is not correct!
- This is not a Principle of ORM.

BACK

# Identify Hazards

# Introduction

- The first step in the ORM process is to identify the hazards.

# Hazard Defined

A hazard is a condition or behavior with the potential to cause personal injury or death, property damage, or mission degradation.

# Hazard Identification Tools

- Operational Analysis
- Brainstorming
- Change Analysis

# Johnny Asphalt's Driving Plan

1. Get off work Thursday as early as possible.
2. Take highways and interstates to Daytona.
3. Drive all night using rest stops and the radio.
4. He has faith in his "beater" car to get him there and back.
5. Party starts as soon as he gets there and continues all weekend.  He will sleep wherever.
6. Set watch for noon on Monday, so he can start home.
7. Drive straight through to Norfolk and get home just in time for work on Tuesday.

# Brainstorming Hazards

- Reduced visibility at night
- Fatigue
- Alcohol
- Excessive speed
- Driver distractions
- Other drivers

# Change Analysis: The “What If?” Tool

- Road construction
- Delay in leaving
- Vehicle breakdown
- Weather

# Choose 3 tools that can help identify hazards

- ☐ Stagnation Analysis
- ☐ Thinking Hat
- ☐ Operational Analysis
- ☐ Outside-the-Box Thinking
- ☐ Organizational Analysis
- ☐ Pass in Review
- ☐ Brainstorming
- ☐ Change Analysis
- ☐ Organizational Review
- ☐ Skylarking

# Correct!

- Your answer is correct!

BACK NEXT

# Incorrect!

- Your answer is not correct!
- Try again!

BACK

# Match the tool used to Identify Hazards with its explanation

- List the steps or specific events associated with the job or activity in sequence

1. Change Analysis

2. Operational Analysis

3. Brainstorming

# Correct!

- Your answer “**Operational Analysis**” is correct!

BACK NEXT

# Incorrect!

- Your answer is not correct!
- Try again!

BACK

# Match the tool used to Identify Hazards with its explanation

- As a group, think of hazards of each step or event.
- Review related documentation.
- Pay particular attention to existing precautions in the procedures.

1. Change Analysis

2. Operational Analysis

3. Brainstorming

# Correct!

- Your answer “**Brainstorming”** is correct!

BACK NEXT

# **Incorrect**!

- Your answer is not correct!
- Try again.

BACK

# Match the tool used to Identify Hazards with its explanation

- Use the "What If?" tool to bring out hazards that may result from unexpected changes in normal procedures

1. Change Analysis

2. Operational Analysis

3. Brainstorming

# *A:* Correct!

- Your answer “**Change Analysis”** is correct!

BACK NEXT

# Incorrect!

- Your answer is not correct!
- Try again.

BACK

**A hazard is a condition or behavior with the potential to cause personal injury or death, property damage, or mission degradation.**

TRUE

FALSE

# True is Correct!

- Your answer is correct!
- A hazard is a condition or behavior with the potential to cause personal injury or death, property damage, or mission degradation.

BACK NEXT

# False is Incorrect!

- Your answer is not correct!
- Try again.

BACK

# Assess Risks

# Introduction

- The second step in the ORM process is to Assess Risks.

# Definitions

- **Risk**: An expression of possible loss due to a hazard in terms of severity and probability.
- **Severity**: Determines how bad the results would be if the hazard caused a mishap. Qualitatively categorized from 1 to 4, with 1 being the most severe.
- **Probability**: Determines how likely the hazard could cause a mishap. Qualitatively categorized from A to D, with A being the most probable.

# Severity

- **Cat I:** Death, loss of facility/asset or result in grave damage to national interests.
- **Cat II:** Severe injury, illness, property damage, damage to national or service interests or degradation.
- **Cat III:** Minor injury, illness, property damage, damage to national or service interests or degradation.
- **Cat IV:** Minimal threat to personnel safety or health, property, national, service or command interests use of assets.

# Probability

- **Subcategory A:** A mishap immediately or within a short period of time.
- **Subcategory B:** Will cause a mishap in time.
- **Subcategory C:** May cause a mishap in time.
- **Subcategory D:** Unlikely to cause a mishap.

# Risk Assessment Code Matrix

The Risk Assessment Code (RAC) Matrix is used to determine the RAC for a hazard. You must cross probability and severity to obtain this code.

**RAC**

1 - Critical
2 - Serious
3 - Moderate
4 - Minor
5 - Negligible

| HAZARD SEVERITY | MISHAP PROBABILITY A | B | C | D |
|---|---|---|---|---|
| I | 1 | 1 | 2 | 3 |
| II | 1 | 2 | 3 | 4 |
| II | 2 | 3 | 4 | 5 |
| IV | 3 | 4 | 5 | 5 |

# RAC Codes Applied

- Reduced visibility at night Severity=1, Probability=C, RAC=2
- Fatigue/Alcohol Severity=1, Probability=B, RAC=1
- Road construction and delays Severity=IV, Probability=C, RAC=5
- Vehicle breakdown Severity=II, Probability=C, RAC=3
- Weather Severity=II, Probability=C, RAC=3
- Excessive speed Severity=I, Probability=C, RAC=2
- Driver distractions Severity=II, Probability=C, RAC=3
- Other drivers Severity=II, Probability=C, RAC=3

# Select the correct definition for the term below.

RISK

Unlikely loss due to a hazard

Expressed in terms of severity and probability

Determines how bad the results would be if the hazard caused a mishap

# $\mathcal{A}$: Correct!

- Your answer “Expressed in terms of severity and probability” is the correct definition of risk!

NEXT

# **Incorrect**!

- Your answer is not correct!
- Try again!

BACK

# Select the correct definition for the term below.

SEVERITY

Determines how bad the results would be if the hazard caused a mishap

Qualitatively categorized from A to D

Determines how bad the results would be if the hazard caused a mishap

# *A:* Correct!

- Your answer “Determines how bad the results would be if the hazard caused a mishap” is the correct definition of severity!

NEXT

# **Incorrect**!

- Your answer is not correct!
- Try again!

BACK

# Select the correct definition for the term below.

PROBABILITY

Qualitatively categorized from 1 to 4

Possible loss due to hazard

Determines the likelihood of the hazard causing a mishap

# Correct!

- Your answer “Determines the likelihood of the hazard causing a mishap” is the correct definition of probability!

NEXT

# **Incorrect**!

- Your answer is not correct!
- Try again!

BACK

# Determine the correct RAC for the following explanations.

| | |
|---|---|
| **Negligible Risk** | RAC 5 |
| **Serious Risk** | RAC 2 |
| **Minor Risk** | RAC 4 |
| **Critical Risk** | RAC 1 |
| **Moderate Risk** | RAC 3 |

**A Risk Assessment Code (RAC) Matrix is comprised of Severity and Probability categories cross-referenced to provide risk codes ranging from 1 to 4.**

TRUE

FALSE

# True is Correct!

- Your answer is correct!
- A Risk Assessment Code (RAC) Matrix is comprised of Severity and Probability categories cross-referenced to provide risk codes ranging from one to four.

NEXT

# False is Incorrect!

- Your answer is not correct!
- Try again!

BACK

# Make Risk Decisions/Implement Controls

# Introduction

- The third and fourth steps in the ORM process are Make Risk Decisions and Implement Controls.

# Risk Decisions

- Everyone must work together to lower risks as low as reasonably achievable through the implementation of controls.
- After implementation of controls, the risk levels (RACs) should be re-assessed for each hazard.
- If the benefits do not outweigh the costs, do NOT proceed with the evolution or activity.

# Risk Decision-Making Levels

- Hazards with a RAC of:
  - 5: Anyone participating in the event
  - 4: The cognizant Supervisor
  - 3: The cognizant Division Officer
  - 2: The Department Head or XO
  - 1: The Commanding Officer or higher

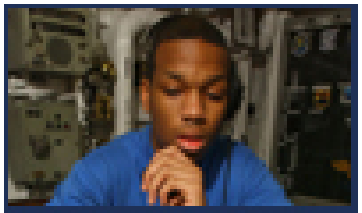
# Controls

- Engineering Controls
- Administrative Controls
- Personal Protective Equipment (PPE)

# Johnny Asphalt's Controls

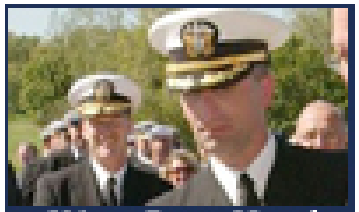
| Hazards<br>Causes of Mishap | Controls | RAC |
|---|---|---|
| Reduced visibility at night | Limit nighttime driving. Maintain slower speeds. | 4 |
| Fatigue/alcohol | Limit driving, get a motel, let friend drive | 4 |
| Road construction/delays | Determine alternate routes. | 5 |
| Vehicle breakdown | Use vehicle checklist, rent or borrow newer car, take cash for emergencies | 4 |
| Weather | Check vehicle safety, pull over during bad weather, wear sunglasses | 3 |
| Excessive speed | Wear seatbelts, stay within speed limits | 4 |
| Driver distractions | Limit distractions | 4 |

# Determine the correct decision-maker for the appropriate RAC Level



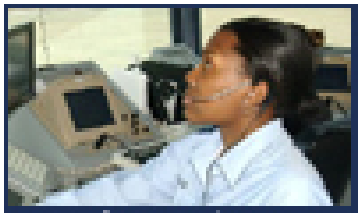
Any Participant

LEVEL 5



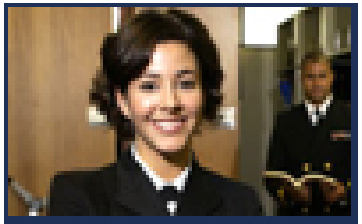
XO or Dept Head (cognizant)

LEVEL 2



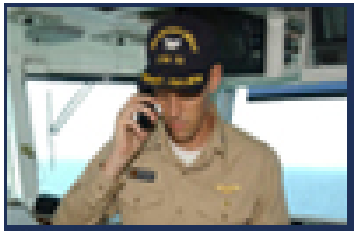
Supervisor (cognizant)

LEVEL 4



DO (cognizant)

LEVEL 3



CO or higher

LEVEL 1

# Which of the following statements are true about making risk decisions and implementing controls ?

- ☐ If, after implementing controls, the RAC is still a 1, 2, or 3, supervisors should seek guidance from upper management.
- ☐ Everyone must work together to lower risks as low as reasonably achievable through implementation of controls.
- ☐ Three types of controls are: engineering, self, and personal protective equipment.
- ☐ If the benefits do NOT outweigh the costs, the determination of whether to proceed is left up to you.
- ☐ Controls are devices, procedures, or methodologies that lessen the risks associated with a hazard.

# *A:* Correct!

- Your answer “If, after implementing controls, the RAC is still a 1, 2, or 3, supervisors should seek guidance from upper management” is correct!

BACK NEXT

# *A:* Correct!

- Your answer “Everyone must work together to lower risks as low as reasonably achievable through implementation of controls” is correct!

BACK NEXT

# Correct!

- Your answer “Controls are devices, procedures, or methodologies that lessen the risks associated with a hazard” is correct!

BACK NEXT

# Incorrect!

- Your answer is not correct!
- Try again.

BACK

# Determine where each of the following control actions should take place.

| ENGINEERING | ADMINISTRATIVE | PPE |
|---|---|---|

- Color-coded jerseys
- Safety interlocks
- Posted warnings
- Hearing protection
- Machine guards
- Less hazardous materials
- Training
- Designated driver
- Hard hats
- Shielding
- Inspections
- Steel-toed boots

# *A:* Engineering

- Safety interlocks
- Machine guards
- Less hazardous materials
- Shielding

BACK NEXT

# Administrative

- Posted warnings
- Training
- Designated driver
- Inspections

BACK NEXT

# *A.* Personal Protective Equipment

- Color-coded jerseys
- Hearing protection
- Hard hats
- Steel-toed boots

BACK NEXT

# Supervision

# Introduction

- Supervision is a key step in the ORM process.
- The better you plan ahead and anticipate the unlikely, the better you will be able to adapt to the changes and ensure the mission is completed without a mishap.

# Aspects of Supervision

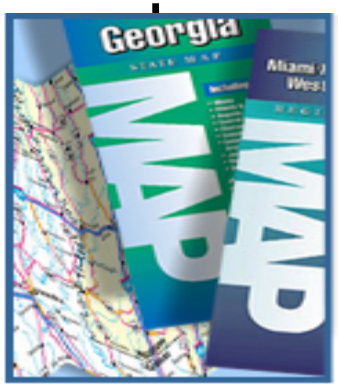
- Before the evolution or activity
- During the evolution or activity
- After the evolution or activity

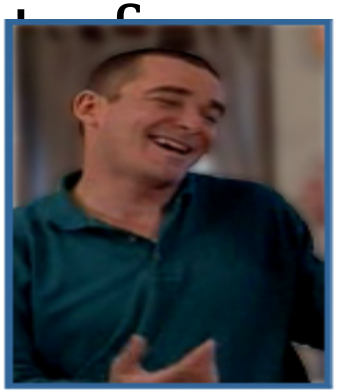
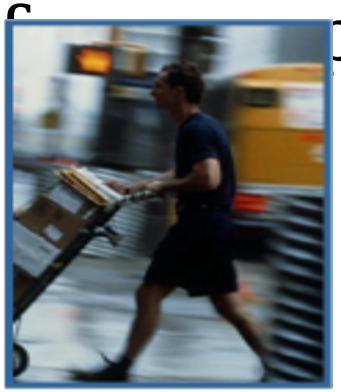
# Responsibilities

- Supervisor Responsibilities
- Worker Responsibilities

# Supervision Application

- Johnny Asphalt should take a friend or family member with him on his trip to:
  - Help navigate using a map
  - Help him stay alert
  - Be a[illegible]pected haza[illegible]



# Determine when each of the following supervisory actions should take place.

BEFORE | DURING | AFTER

- ☐ Monitor effectiveness of controls
- ☐ Reassess as needed
- ☐ Present a safety brief
- ☐ Modify/acquire additional controls
- ☐ Correct step/events that were required to be
- ☐ done differently
- ☐ Review and document lessons learned
- ☐ Watch for changes in the environment
- ☐ Pre-check status of controls
- ☐ Provide additional training to identified personnel
- ☐ Perform a dry run

# $\mathcal{A}$: Before

- Present a safety brief
- Pre-check status of controls
- Perform a dry run

BACK NEXT

# During

- Monitor effectiveness of controls
- Reassess as needed
- Watch for changes in the environment

BACK NEXT

# *A:* After

- Modify/acquire additional controls
- Correct step/events that were required to be done differently
- Review and document lessons learned
- Provide additional training to identified personnel

BACK NEXT

# Which of the following statements are true about supervision?

- ☐ Supervisors should stay out of the work directly.
- ☐ Workers should alert supervisors when unexpected hazards appear.
- ☐ Supervisors should stop the action if a significant change to the plan occurs.
- ☐ Supervisors should watch the whole event and ensure procedures are followed as briefed.
- ☐ Workers should follow procedures.

# $\mathcal{A}$: Correct!

- Your answer is correct!

BACK NEXT

# Correct!!

- That’s right, all 5 statements are correct!

NEXT

# ORM Summary

# Review

- Identify the steps of the ORM process and apply them to real-life situations.
- Using ORM in all your activities on the job and off duty reduces your risk of a mishap.
- Mishaps cost not only the loss of property but also the lives of shipmates, friends, and loved ones.

# Scenario Review

As for Johnny Asphalt, he reduced his risk levels significantly by making simple changes to his plan. He had his car inspected and ended up replacing worn brakes and a leaking power steering hose. He also invited a friend to come along to share the driving time. His friend had some relatives in South Carolina where they were able to stay the night; they then got up early, well-rested for the rest of the trip. They still got to Daytona in plenty of time on Friday to enjoy the festivities through the weekend, and it was a lot more fun having a friend along.

# Scenario Review (Continued)

His trip went so well that he did more risk management of his recreational activities while in Daytona.  As for the return trip, they stopped drinking at 1800 Sunday evening in order to be sober for driving back early the next morning.  They made it back late Monday night safe and sound after taking several breaks along the way, including an early dinner at his friend's relative's house in South Carolina.

# NROTC ORM

- Unit mission
- Training syllabus
- Medical reporting
- Safety surveys
- PT Requirements
- Swim Program
- Sail Training
- Rifle/Pistol
- Close Order Drill
- Marine Field Training Exercises
- Marine hikes
- Orientation
- Levels of ORM training in NROTC Program
- Pre-Mishap Safety Plan
- Medical Reporting
- ORM Cards

# Questions & Summary